Net-centric Data Strategy: Implementation Considerations

"Transforming Information Into Decisive Effects"

Presented To

FORCEnet Engineering Conference

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What is FORCEnet?

► Primary Catalyst For Naval Transformation

► The Operational Construct And Architectural Framework For Naval Warfare In The Information Age

► Integrates Warriors, Sensors, C2, Platforms And Weapons Into A Networked, Distributed Combat Force

► Objective: Provide Commanders The Means To Make Better, Timelier Decisions

► Better Evaluate The Results Of Decisions Made

► FORCEnet = Network Effect: Value Of A Product Or Service In A Network Increases Exponentially To Number Of Users
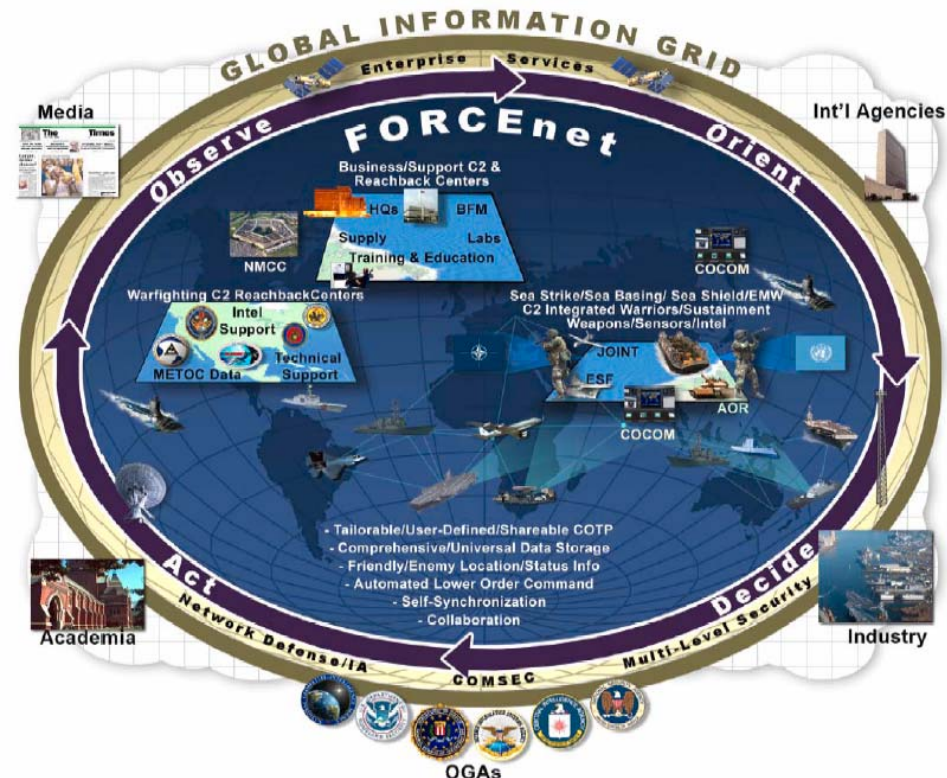
(Source: FORCEnet Functional Concept)

Objective of Net-centric Data Strategy Paper

► Scoping Document

► Bound the Problem Set

► Define the Elements of a Data Strategy

► Stimulate Discussion on Approaches

Goal: Optimize Information Resources Across the Mission Area Domains

Data Challenges

► Data problems are not unique to any one functional area or organization

► There is a need for policy, process, supporting infrastructure, and a plan to leverage efforts

► Data management requires senior management champions

► Data management is not adequately addressed in budget or acquisition processes

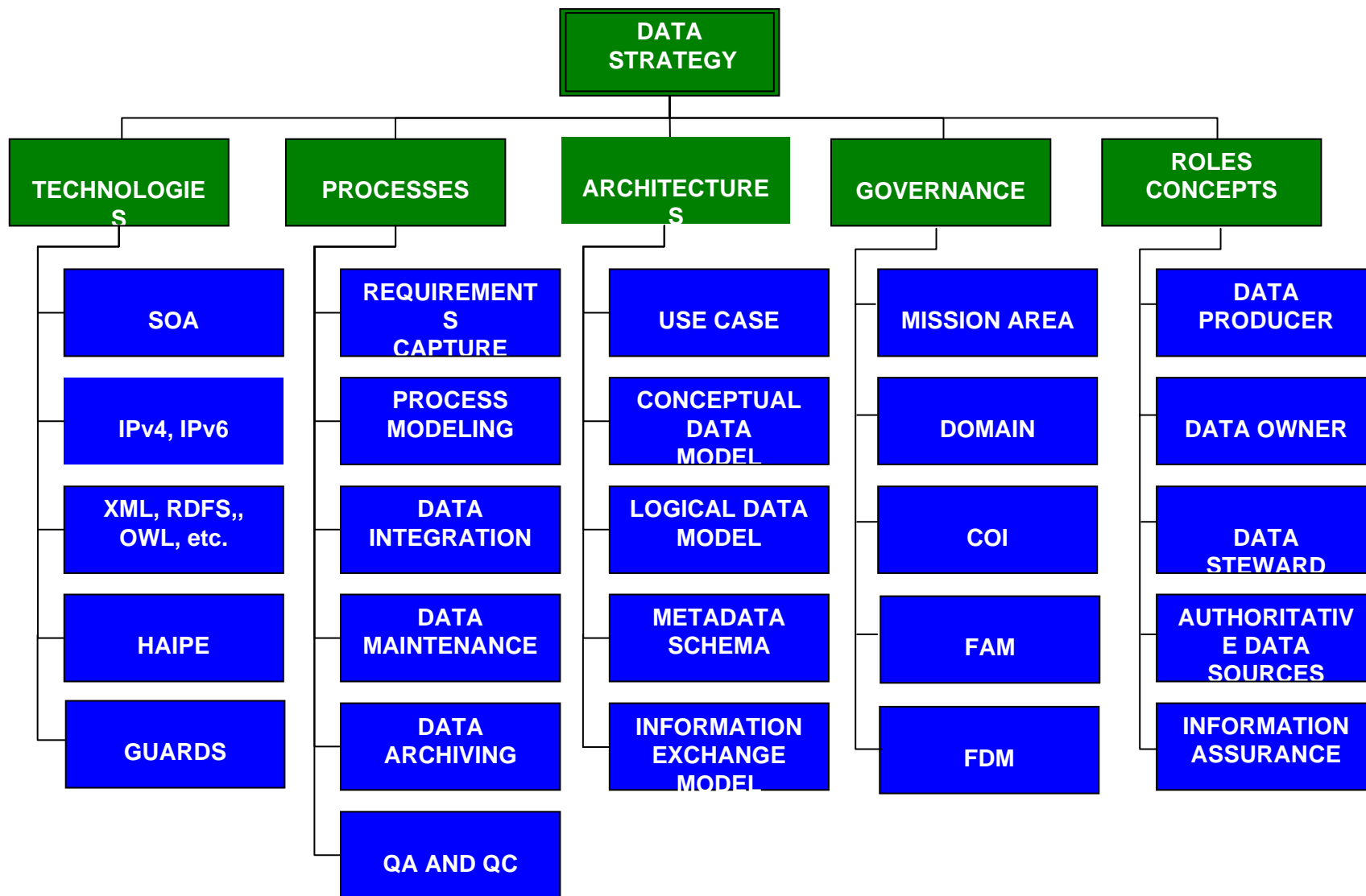**DoN CIO Data Management and Interoperability IPT: 1999**

Data Changes

► Data ownership will no longer remain constant as data transverses (is used) throughout the enterprise

► Data will be shared across the operational warfighting continuum and used by services/functions it was not initially intended to support creating an expanding group of data consumers not envisioned by the data producers

► The visibility and accessibility of data across the enterprise will create an imperative that the Enterprise institutionalize and maintain designated authoritative data sources (i.e., data producers) to ensure trusted data sources

► Stovepipe decisions effecting data generation by an individual data producer in the future will have a potentially negative effect on enterprise data needs
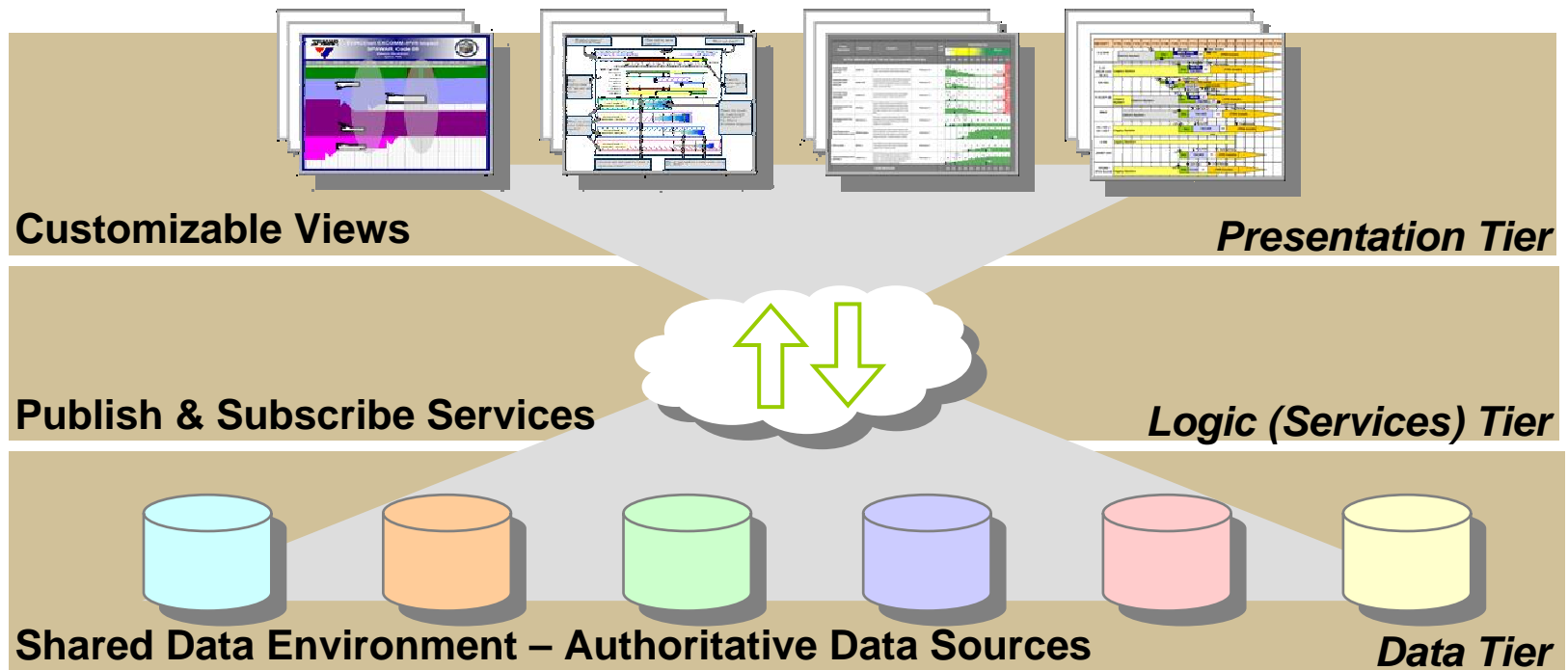
Data Becomes a Commodity

Data Strategy Elements


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                          DATA
                        STRATEGY

  TECHNOLOGIE  PROCESSES  ARCHITECTURE  GOVERNANCE  ROLES
      S                        S                   CONCEPTS
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TECHNOLOGIES	PROCESSES	ARCHITECTURES	GOVERNANCE	ROLES CONCEPTS
SOA	REQUIREMENTS CAPTURE	USE CASE	MISSION AREA	DATA PRODUCER
IPv4, IPv6	PROCESS MODELING	CONCEPTUAL DATA MODEL	DOMAIN	DATA OWNER
XML, RDFS,, OWL, etc.	DATA INTEGRATION	LOGICAL DATA MODEL	COI	DATA STEWARD
HAIPE	DATA MAINTENANCE	METADATA SCHEMA	FAM	AUTHORITATIVE DATA SOURCES
GUARDS	DATA ARCHIVING	INFORMATION EXCHANGE MODEL	FDM	INFORMATION ASSURANCE
	QA AND QC			

Technology

► Services Oriented Architecture

► Packet Switched Networking (IP)

► Network Information Assurance

► Smart Data

N-Tier Strategy

Customizable Views

Presentation Tier

Publish & Subscribe Services

Logic (Services) Tier

Shared Data Environment – Authoritative Data Sources

Data Tier

**Decoupling is a
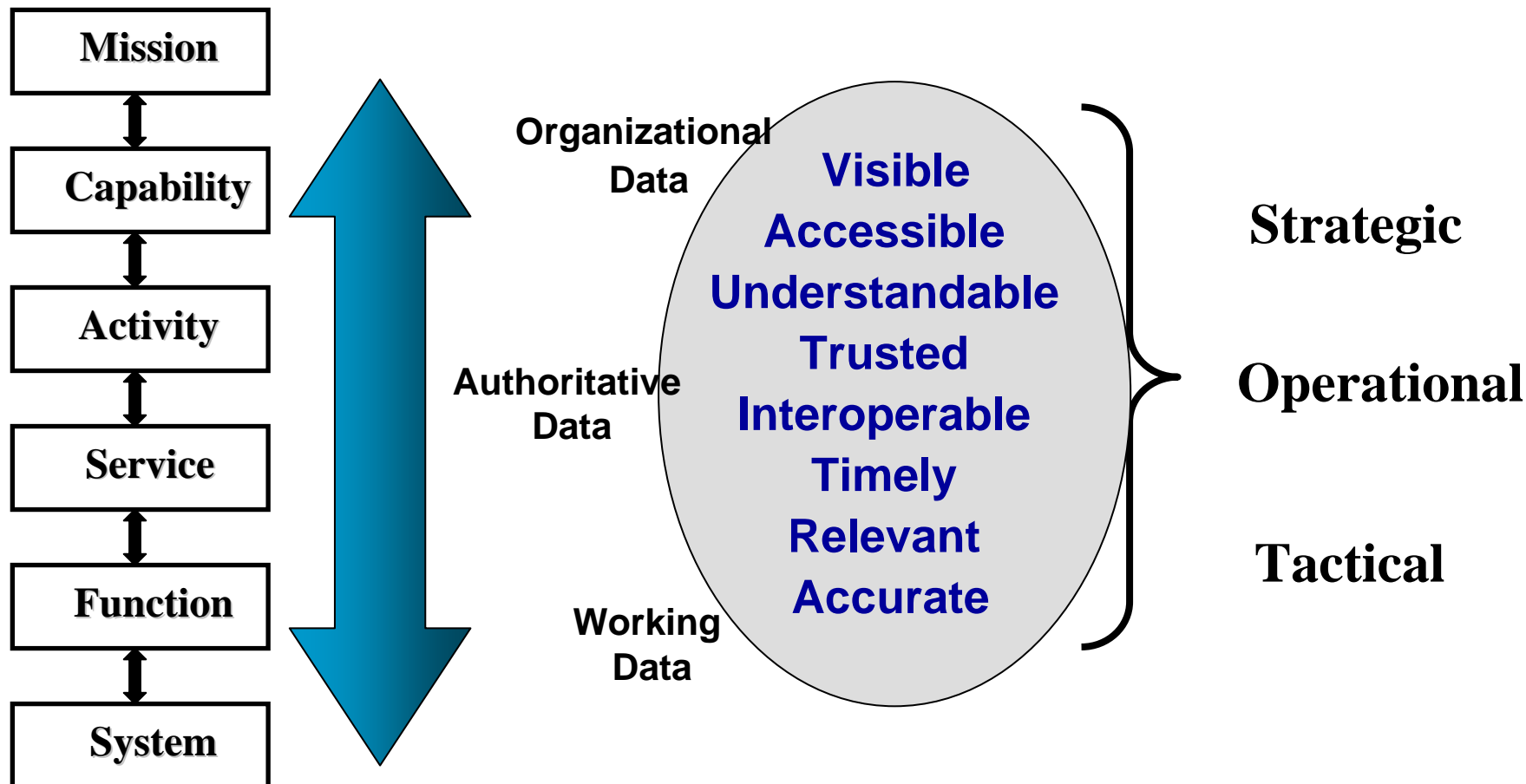Fundamental Contribution of Service Oriented Architectures**

Data Management Processes

► Requirements Capture

► Process Modeling

► Data Integration

► Data Maintenance

► Data Archiving

► Quality Assurance / Quality Control

Enterprise Approach Increases Complexity

Processes:
In Mission Context

Mission

Capability

Activity

Service

Function

System

Organizational Data

Authoritative Data

Working Data

Visible
Accessible
Understandable
Trusted
Interoperable
Timely
Relevant
Accurate

Strategic

Operational

Tactical

Enterprise Approach Increases Complexity

Data Architectures

► Logical Data Model

► Conceptual Data Model

► Metadata Schema

► Information Exchange Model

DODAF is Only Part of the Solution

Governance

► Mission Area

► Domain

► Community of Interest

► Functional Area Manager

► Functional Data Manager
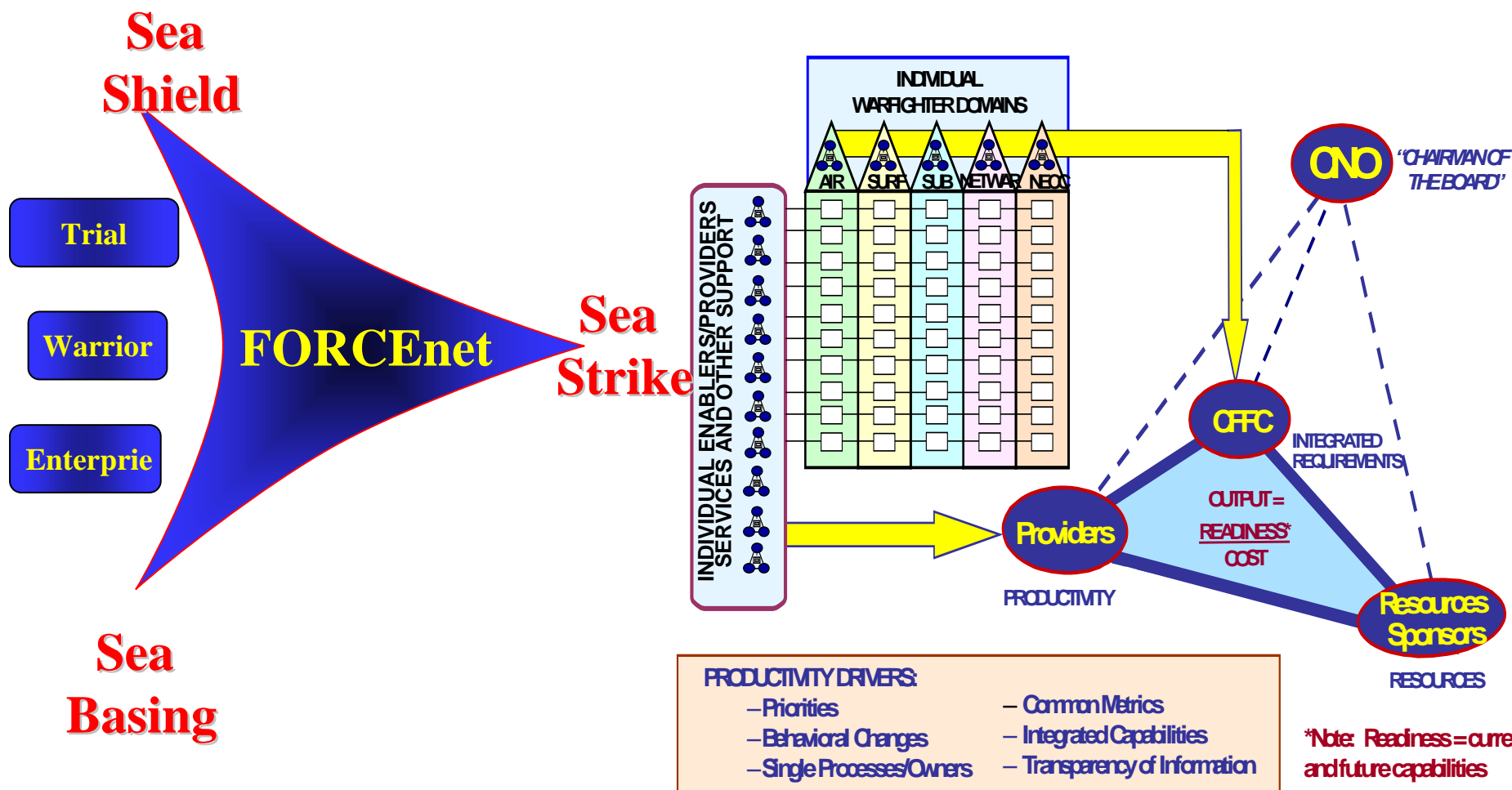
**Define and Align
Authorities With Responsibilities**

Evolving Roles and Concepts

► Data Producer

► Data Owner

► Data Steward

► Authoritative Data Sources

► Portfolio Management

► Information Assurance

Summary

► Data in a Netcentric Environment Poses New, Exciting Challenges

► Warfighting or Business Area "Mission" Provides the Necessary Context for Data

► All Elements of the Data Strategy Must Be Synchronized

► Technology is Key, But is Only an Enabler

► The Enterprise Requires Clear Governance to Implement the Strategy Effectively